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NEWS 1 Web Page URLs for STN Seminar Schedule - N. America  
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NEWS 3 SEP 09 CA/CAplus records now contain indexing from 1907 to the present  
NEWS 4 AUG 05 New pricing for EUROPATFULL and PCTFULL effective August 1, 2003  
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NEWS 6 AUG 18 Data available for download as a PDF in RDISCLOSURE  
NEWS 7 AUG 18 Simultaneous left and right truncation added to PASCAL  
NEWS 8 AUG 18 FROSTI and KOSMET enhanced with Simultaneous Left and Right Truncation  
NEWS 9 AUG 18 Simultaneous left and right truncation added to ANABSTR  
NEWS 10 SEP 22 DIPPR file reloaded  
NEWS 11 DEC 08 INPADOC: Legal Status data reloaded  
NEWS 12 SEP 29 DISSABS now available on STN  
NEWS 13 OCT 10 PCTFULL: Two new display fields added  
NEWS 14 OCT 21 BIOSIS file reloaded and enhanced  
NEWS 15 OCT 28 BIOSIS file segment of TOXCENTER reloaded and enhanced  
NEWS 16 NOV 24 MSDS-CCOHS file reloaded  
NEWS 17 DEC 08 CABA reloaded with left truncation  
NEWS 18 DEC 08 IMS file names changed  
NEWS 19 DEC 09 Experimental property data collected by CAS now available in REGISTRY  
NEWS 20 DEC 09 STN Entry Date available for display in REGISTRY and CA/CAplus  
  
NEWS EXPRESS NOVEMBER 14 CURRENT WINDOWS VERSION IS V6.01c, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP), AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003  
NEWS HOURS STN Operating Hours Plus Help Desk Availability  
NEWS INTER General Internet Information  
NEWS LOGIN Welcome Banner and News Items  
NEWS PHONE Direct Dial and Telecommunication Network Access to STN  
NEWS WWW CAS World Wide Web Site (general information)

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Kamal Saeed

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- \* ENCOMPAT - EnCompass Patent File 1964-present (Supporters)
- \* ENCOMPAT2 - EnCompass Patent File 1964-Present (Non-Supporters)

\* The files listed above are temporarily unavailable.

FILE 'HOME' ENTERED AT 11:48:08 ON 14 DEC 2003

FILE 'REGISTRY' ENTERED AT 11:48:17 ON 14 DEC 2003  
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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 12 DEC 2003 HIGHEST RN 626603-92-7  
DICTIONARY FILE UPDATES: 12 DEC 2003 HIGHEST RN 626603-92-7

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

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Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

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=> d  
ENTER NAME OF ITEM TO BE DISPLAYED OR (?) :  
Uploading  
'UPLOAD' IS NOT VALID HERE
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For an explanation, enter "HELP DISPLAY".

=> 09893858.str

0 IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.  
For a list of commands available to you in the current file, enter  
"HELP COMMANDS" at an arrow prompt (=>).

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0 IS NOT A RECOGNIZED COMMAND  
The previous command name entered was not recognized by the system.  
For a list of commands available to you in the current file, enter  
"HELP COMMANDS" at an arrow prompt (=>).

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The previous command name entered was not recognized by the system.

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For a list of commands available to you in the current file, enter "HELP COMMANDS" at an arrow prompt (=>).

=> d

ENTER NAME OF ITEM TO BE DISPLAYED OR (?) :end

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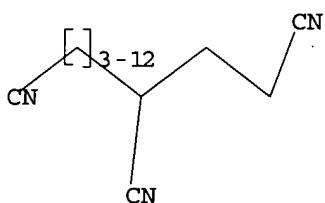
Uploading 09893858.str

L1 STRUCTURE UPLOADED

=> d

L1 HAS NO ANSWERS

L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> s l1 full

FULL SEARCH INITIATED 11:49:12 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 7824 TO ITERATE

100.0% PROCESSED 7824 ITERATIONS  
SEARCH TIME: 00.00.01

48 ANSWERS

L2 48 SEA SSS FUL L1

=> file caplus  
COST IN U.S. DOLLARS  
FULL ESTIMATED COST

SINCE FILE ENTRY	TOTAL SESSION
148.55	148.76

FILE 'CAPLUS' ENTERED AT 11:49:19 ON 14 DEC 2003

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FILE COVERS 1907 - 14 Dec 2003 VOL 139 ISS 25  
FILE LAST UPDATED: 12 Dec 2003 (20031212/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s 12
L3          68 L2

=> s 13 and acrylonitrile
      83204 ACRYLONITRILE
      937 ACRYLONITRILES
      83461 ACRYLONITRILE
                  (ACRYLONITRILE OR ACRYLONITRILES)
L4          39 L3 AND ACRYLONITRILE

=> s 14 and dinitrile
      1821 DINITRILE
      1291 DINITRILES
      2645 DINITRILE
                  (DINITRILE OR DINITRILES)
L5          0 L4 AND DINITRILE

=> d ibib abs hitstr tot 14
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L4 ANSWER 1 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2003:532626 CAPLUS

DOCUMENT NUMBER: 139:86730

TITLE: Preparation of a polycarboxylic acid mixture containing mainly 1,3,6-hexanetricarboxylic acid

INVENTOR(S): Date, Hideki; Shimoda, Teruyoshi

PATENT ASSIGNEE(S): Asahi Kasei Kabushiki Kaisha, Japan

SOURCE: PCT Int. Appl., 97 pp.

CODEN: PIXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003055936	A1	20030710	WO 2002-JP13808	20021227
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, RW, GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CI, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRIORITY APPN. INFO.: JP 2001-397451 A 20011227

AB This document discloses a polycarboxylic acid mixt. having a 1,3,6-hexanetricarboxylic acid (I) content of 80 wt.% or higher, characterized by having a psychometric lightness L of 98 or higher, a chromaticness index a of -2.0 to 2.0, a chromaticness index b of -2.0 to 3.0, and a nitrogen content of 5,000 Wt.ppm or lower. The above mixt.

was obtained by hydrolysis of a mixt. contg. mainly 1,3,6-tricyanohexane. I is useful as a hardener for compds. contg. epoxy functions and is used in coatings.

IT 1772-25-4P, 1,3,6-Tricyanohexane  
RL: BYP (Byproduct); RCT (Reactant); PREP (Preparation); RACT (Reactant)

or reagent)

(prepn. of polycarboxylic acid mixt. contg. mainly 1,3,6-hexanetricarboxylic acid as hardener for epoxy resins)

RN 1772-25-4 CAPLUS

CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

CN

NC—CH<sub>2</sub>—CH<sub>2</sub>—CH—(CH<sub>2</sub>)<sub>3</sub>—CN

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L4 ANSWER 2 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2003:525387 CAPLUS

DOCUMENT NUMBER: 139:68954

TITLE: Preparation of colorless 1,3,6-hexanetricarboxylic acid from 1,3,6-tricyanohexane as byproducts of electroreduction of acrylonitrile

INVENTOR(S): Utabame, Takuji; Shimoda, Akiyoshi

PATENT ASSIGNEE(S): Asahi Kasei Corporation, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003192631	A2	20030709	JP 2001-397453	20011227
PRIORITY APPN. INFO.:			JP 2001-397453	20011227
AB	1,3,6-Hexanetricarboxylic acid (I) and/or its salts are prep'd. by (A) hydrolysis of crude 1,3,6-tricyanohexane (II) obtained by electroredn. of CH <sub>3</sub> CN and (B) crystn. Thus, a mixt. contg. II 93.3, 3-cyanomethyl-1,5-dicyanopentane 5.8, and adiponitrile 0.9% was hydrolyzed with NaOH, neutralized, water added, and cooled to 3-10.degree. to give 73.9% I having purity of 99.6% and L value of 98.94.			
IT	1772-25-4P, 1,3,6-Tricyanohexane			
RL	BYP (Byproduct); RCT (Reactant); PREP (Preparation); RACT (Reactant)			
or reagent)	(crystn. of hexanetricarboxylic acid prep'd. from tricyanohexane as byproducts of electroredn. of acrylonitrile)			
RN	1772-25-4 CAPLUS			
CN	1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)			

CN

NC—CH<sub>2</sub>—CH<sub>2</sub>—CH—(CH<sub>2</sub>)<sub>3</sub>—CN

L4 ANSWER 3 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2003:525386 CAPLUS

DOCUMENT NUMBER: 139:68953

TITLE: Preparation of colorless 1,3,6-hexanetricarboxylic acid from 1,3,6-tricyanohexane as byproducts of electroreduction of acrylonitrile

INVENTOR(S): Shimoda, Akiyoshi; Ishida, Hiroshi

PATENT ASSIGNEE(S): Asahi Kasei Corporation, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003192630	A2	20030709	JP 2001-397452	20011227
PRIORITY APPN. INFO.:			JP 2001-397452	20011227
AB	1,3,6-Hexanetricarboxylic acid (I) and/or its salts are prep'd. by (A) hydrolysis of crude 1,3,6-tricyanohexane (II) obtained by electroredn. of CH <sub>3</sub> CN and (B) treatment of the reaction mixts. with oxidizing agents. Thus, a mixt. contg. II 93.3, 3-cyanomethyl-1,5-dicyanopentane 5.8, and adiponitrile 0.9% was hydrolyzed with NaOH to give pale brown I, which was dissolved in water and treated with ozone for bleaching.			
IT	1772-25-4P, 1,3,6-Tricyanohexane			
RL	BYP (Byproduct); RCT (Reactant); PREP (Preparation); RACT (Reactant)			
or reagent)	(O3 bleaching of hexanetricarboxylic acid prep'd. from tricyanohexane as byproducts of electroredn. of acrylonitrile)			
RN	1772-25-4 CAPLUS			
CN	1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)			

CN

NC—CH<sub>2</sub>—CH<sub>2</sub>—CH—(CH<sub>2</sub>)<sub>3</sub>—CN

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L4 ANSWER 4 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 2003:510101 CAPLUS  
DOCUMENT NUMBER: 139:68960

TITLE: Less-colored trinitrile mixtures and their preparation  
by electrolytic reduction of acrylonitrile  
INVENTOR(S): Shimoda, Akiyoshi; Ishida, Hiroshi  
PATENT ASSIGNEE(S): Asahi Kasei Corporation, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003183239	A2	20030703	JP 2001-389826	20011221
			JP 2001-389826	20011221

PRIORITY APPLN. INFO.: AB Less-colored trinitrile mixts., which show content of trinitrile compds. .gtoreq.85%, content of adiponitrile (I) .ltoreq.10%, L value (brightness)

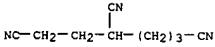
of 0.10 g/mL diethylene glycol di-Me ether soln..gtoreq.98, and a and b values (chromaticness indexes) -1.0-1.0 and -1.0-2.0, resp., are prep'd. by (1) electrolytic redn. of acrylonitrile in the presence of electrolytes, (2) removal of I and components having b.p. higher than that of trinitrile compds. from the reaction product mainly contg. I so that content of I is .ltoreq.10% and content of trinitrile compds. is .gtoreq.85%, and (3) treatment of the products with solid adsorbents and/or oxidizing agents. Thus, a mixt. contg. 1,3,6-tricyanohexane (II) 93.3, 3-cyanomethyl-1,5-dicyanopentane 5.8, and I 0.9% (value 99.8, a value 0.20, b value 0.11, and APhA .ltoreq.100) was obtained by the above method. II is useful as a material for 4-aminomethyl-1,8-diaminoctane, 1,3,6-hexanetricarboxylic acid, etc.

IT 1772-25-4P, 1,3,6-Tricyanohexane  
RL: IMF (Industrial manufacture); PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

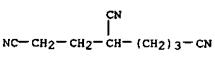
(prepn. of less-colored trinitrile mixts. by electrolytic redn. of acrylonitrile and removal of adiponitrile)

RN 1772-25-4 CAPLUS

CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 4 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)



REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 2002:172114 CAPLUS  
DOCUMENT NUMBER: 136:215533

TITLE: Method for an enzymatic reaction of compounds having at least one nitrile function and/or at least one amide function

INVENTOR(S): Hauer, Bernhard; Pressler, Uwe; Reiss-Loeschke, Marion; Syldatk, Christoph; Christian, Hans-Juergen;

Pietzsch, Markus  
PATENT ASSIGNEE(S): Baaf Aktiengesellschaft, Germany  
SOURCE: PCT Int. Appl., 49 pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2002018612	A1	20020307	WO 2001-EP10025	20010830
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TU, TM				

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
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DE 10042835 A1 20020314 DE 2000-10042835 20000830
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AU 200109181 A5 20020313 AU 2001-91811 20010830
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EP 1315824 A1 20030604 EP 2001-971983 20010830
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
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PRIORITY APPLN. INFO.: DE 2000-10042835 A 20000830

WO 2001-EP10025 W 20010830

OTHER SOURCE(S): CASREACT 136:215533

AB The invention relates to the enzymatic reaction of compds. having at least one nitrile function and/or at least one amide function with at least one microorganism and/or at least one nitrile hydratase-amidase complex isolated from Rhodococcus erythropolis DSM 13002, Rhodococcus

erythropolis

DSM 13475 and Rhodococcus erythropolis DSM 13476. Thus, free cells of Rhodococcus erythropolis DSM 13002 reduced ~ 90 mM propanenitrile to produce propanamide in 15 min. The resulting propanamide was then slowly deaminated to produce propanoic acid.

IT 1772-25-4P, 1,3,6-Hexanetricarbonitrile

RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(enzymic redn. and deamidation with Rhodococcus nitrile hydratase and amidase)

RN 1772-25-4 CAPLUS

CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

L4 ANSWER 6 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2002:31043 CAPLUS

DOCUMENT NUMBER: 136:71544

TITLE: Process for the preparation of 1,3,6-hexanetricarbonitrile

INVENTOR(S): Schelhaas, Michael; Jautelat, Manfred  
PATENT ASSIGNEE(S): Bayer Aktiengesellschaft, Germany  
SOURCE: Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 1170282 A1 20020109 EP 2001-114779 20010626
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EP 1170282 B1 200301001
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
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DE 10032881 A1 20020117 DE 2000-10032881 20000706
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AT 251121 E 200301015 AT 2001-1114779 20010626
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US 2002007081 A1 20020117 US 2001-893858 20010628
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JP 2002053540 A2 20020219 JP 2001-202163 20010703
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CN 1341589 A 20020327 CN 2001-122837 20010706
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PRIORITY APPLN. INFO.: DE 2000-10032881 A 20000706

OTHER SOURCE(S): MARPAT 136:71544

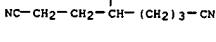
AB 1,3,6-Hexanetricarbonitrile is prep'd. by the addn. reaction of an org. adiponitrile soln. (e.g., toluene solvent) with acrylonitrile in the presence of an aq. strong base (e.g., KOH) soln. in the presence of a phase-transfer catalyst (e.g., tetrabutylammonium bisulfate).

IT 1772-25-4P, 1,3,6-Hexanetricarbonitrile

RL: SPN (Synthetic preparation); PREP (Preparation)  
(process for the prepn. of 1,3,6-hexanetricarbonitrile)

RN 1772-25-4 CAPLUS

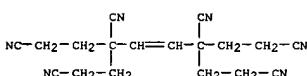
CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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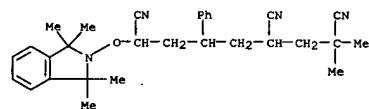
L4 ANSWER 7 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1998:598898 CAPLUS  
 DOCUMENT NUMBER: 129:289789  
 TITLE: The kinetics and mechanism of the phosphorus-catalyzed dimerization of acrylonitrile.  
 AUTHOR(S): Hall, C. Dennis; Lowther, Nicholas; Tweedy, Bruce R.; Hall, Adam C.; Shaw, Gordon  
 CORPORATE SOURCE: Dept. of Chemistry, King's College, London, WC2R 2LS, UK  
 SOURCE: Journal of the Chemical Society, Perkin Transactions 2: Physical Organic Chemistry (1998), (9), 2047-2054  
 CODEN: JCPKBF; ISSN: 0300-9580  
 PUBLISHER: Royal Society of Chemistry  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Iso-Pt diarylphosphinates ( $\text{Ar}_2\text{POPr}$ ) catalyze the dimerization of acrylonitrile (ADN) to a mixt. of cis- and trans-1,4-dicyanobut-1-ene (cis,trans-DCB-1), trans-1,4-dicyanobut-2-ene (DCB-2) and 2,4-dicyanobut-1-ene (MGN). The kinetics and mechanism of the reaction, which is a potential source of hexamethylenediamine, are reported in detail and the factors which govern rate and selectivity to DCB-1 and DCB-2 rather than MGN are elaborated.  
 IT 68334-52-1  
 RL: BYP (Byproduct); PREP (Preparation)  
 (byproduct; kinetics and mechanism of the phosphorus-catalyzed dimerization of acrylonitrile)  
 RN 68334-52-1 CAPLUS  
 CN 4-Octene-1,3,6,8-tetracarbonitrile, 3,6-bis(2-cyanoethyl)- (7CI, 9CI)  
 (CA INDEX NAME)



REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1998:583634 CAPLUS  
 DOCUMENT NUMBER: 129:276394  
 TITLE: Initiation mechanisms in free radical polymerization: competitive reaction of cyanoisopropyl radicals with styrene and acrylonitrile.  
 AUTHOR(S): Busfield, W. Ken; Jenkins, Ian D.; Le, Phuc Van  
 CORPORATE SOURCE: School of Science, Griffith University, Brisbane, 4111, Australia  
 SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (1998), 36(13), 2169-2176  
 CODEN: JPACCC; ISSN: 0887-624X  
 PUBLISHER: John Wiley & Sons, Inc.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The competitive reactions of cyanoisopropyl radicals with mixed monomers styrene and acrylonitrile were studied using the nitroxide radical trapping technique. When the trap concn. is low, second, third, and even fourth generation (in terms of successive monomer addn.) carbon radicals were obstd. as trapped products. The ratio of rate consts. for the addn. of styrene and acrylonitrile to cyanoisopropyl radicals is 2.7 at 75.degree. and 5.3 at 103.degree.. These values were compared with the ratios for reactions of these two monomers with other radicals and the mechanism is discussed in terms of polarity of radicals and monomers.

IT 213916-14-4  
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)  
 (initiation mechanism and competitive reaction of cyanoisopropyl radicals with styrene and acrylonitrile in radical polymn.)  
 RN 213916-14-4 CAPLUS  
 CN 1,5,7-Octanetricarbonitrile, 1-[(1,3-dihydro-1,1,3,3-tetramethyl-2H-isoindol-2-yl)oxy]-7-methyl-3-phenyl- (9CI) (CA INDEX NAME)

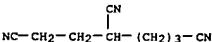


REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1998:196292 CAPLUS  
 DOCUMENT NUMBER: 128:218622  
 TITLE: Use of hexanetricarboxylic acid as a complexing agent or builder in detergent formulations  
 INVENTOR(S): Ofring, Alfred; Ott, Christian; Potthoff-Karl, Birgit  
 PATENT ASSIGNEE(S): BASF A.-G., Germany  
 SOURCE: Ger. Offen., 13 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19637428	A1	19980319	DE 1996-19637428	19960913

PRIORITY APPLN. INFO.: DE 1996-19637428 19960913  
 AB 1,3,6-Hexanetricarboxylic acid (I; a byproduct of acrylonitrile manuf.) or its alkali metal or ammonium salt is used as a complexing agent or (co)builder in laundry detergents and cleaning agents, showing improved biodegradability over EDTA. Thus, 1,3,6-tricyanohexane was hydrolyzed in 20% NaOH and acidified with concd. H<sub>2</sub>SO<sub>4</sub> to give I. An effective cleaning agent for stainless steel brewing tanks at 60-80.degree. was prep'd. by combining 50% KOH 40, 30% soln. of the tri-Na salt of I 20, ethoxylated isostearyl alcohol and isononanoic acid 3, aliph. carboxylic acid mixt. 3, and water 34 wt.%.  
 IT 1772-25-4, 1,3,6-Tricyanohexane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (use of hexanetricarboxylic acid as complexing agent or builder in detergent formulations)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



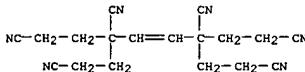
L4 ANSWER 10 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1998:90235 CAPLUS  
 DOCUMENT NUMBER: 128:197887  
 TITLE: Electroorganic synthesis and product recovery  
 AUTHOR(S): King, Chris J. H.; Cutchens, Charles E.  
 CORPORATE SOURCE: Solutia, Inc., Pensacola, FL, USA  
 SOURCE: International  
 Forum, Electrolysis in the Chemical Industry, 11th, Clearwater Beach, Fla., Nov. 2-6, 1997 (1997), 247-258. Electrosynthesis: Lancaster, N. Y.  
 CODEN: 650RAS  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English  
 AB The problems of formation unstable polymer from monomers formed from de-cyanoethylation that leads to carbonization and fouling of column surfaces, the instability of cyanoethylation products that leads to refined adiponitrile (ADN) contg. unexpected level of impurities which reduce hydrogenation catalyst activity in the electrohydrodimerization (HMD) process are discussed. It is noted that in the cell operation it is

necessary to prevent formation of reversible cyanoethylated impurities to avoid yield losses, ADN refining train fouling, catalyst poisons and undesirable impurities in refined HMD.  
 IT 1772-25-4, 1,3,6-Hexanetricarbonitrile  
 RL: BYP (Byproduct); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)  
 (electroorg. synthesis and product recovery)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

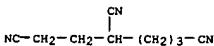
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L4 ANSWER 11 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1995:520920 CAPLUS  
 DOCUMENT NUMBER: 123:227616  
 TITLE: Catalytic dimerization of acrylonitrile. I.  
 Homogeneous catalysts from alkyl diarylphosphinites and dialkyl arylphosphonites  
 AUTHOR(S): Jennings, J. R.; Cozens, R. J.  
 CORPORATE SOURCE: University of Durham, Industrial Research Laboratories, South Road, Durham, DH1 3LE, UK  
 SOURCE: Applied Catalysis, A: General (1995), 124(2), 297-315  
 CODEN: ACAGE4; ISSN: 0926-860X  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Acrylonitrile has been converted catalytically to the straight chain dimer, 1,4-dicyanobutene-1, for the first time with both high selectivity to the linear dimer and in high yield on acrylonitrile consumed. The catalyst is an am. phosphinic or phosphonite, in a reaction medium which contains alc., hydrocarbon and acrylonitrile, and which must be purified rigorously from traces of water and phenolic stabilizers normally present in com. acrylonitrile, otherwise catalyst deactivation results. The catalysts were discovered during detailed investigations into the activities of related heterogeneous catalysts which had also been discovered to give high selectivities to the linear dimer, but in a poorly reproducible manner. The dimerization is thought to proceed via the formation of ylide and betaine intermediates derived from the addn. of the phosphorus deriv. to acrylonitrile. The factors affecting catalyst performance and selectivity are discussed. The product from each dimerization reaction was a mixt.  
 contn.  
 is- and trans-1,4-dicyano-1-butene, 1,4-dicyano-2-butene,  
 1,3-dicyano-1-butene, hexa-acrylonitrile, and others.  
 IT 68334-52-1P  
 RL: BYP (Byproduct); PREP (Preparation)  
 (catalytic dimerization of acrylonitrile using alkyl diarylphosphinite and dialkyl arylphosphonite catalysts)  
 RN 68334-52-1 CAPLUS  
 CN 4-Octene-1,3,6,8-tetracarbonitrile, 3,6-bis(2-cyanoethyl)- (7CI, 9CI)  
 (CA INDEX NAME)

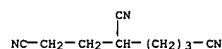


L4 ANSWER 13 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1989:57109 CAPLUS  
 DOCUMENT NUMBER: 110:57109  
 TITLE: Preparation of 4-aminomethyl-1,8-diaminoctane  
 INVENTOR(S): Yamataka, Kazunori; Oshima, Shozo  
 PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62270550	A2	19871124	JP 1986-113592	19860520
JP 07045440	B4	19950517		
PRIORITY APPLN. INFO.:		JP 1986-113592		19860520
OTHER SOURCE(S):		CASREACT 110:57109		
AB H2N(CH2)3CH(CH2NH2)(CH2)4NH2 (I), useful as an epoxy curing agent, anticorrosive agent, etc. (no data), was prep'd. by electrolytic redn. of CH2:CHCN (II) in the presence of quaternary ammonium salts, elimination of NC(CH2)4CN (III) to 1.toreq.2% from the electrolytic soln. contg. III and NCCN2CH2CH(CN)CH2CH2CN (IV), mol. distn. of IV from the high b.p. residue, and liq. phase hydrogenation of IV in the presence of Raney catalysts. Thus, electrolysis was carried out in an electrolyzer contg. 10% aq. H2SO4 anolyte and a catholyte which consisted of a 2:8 (by vol.) org. phase/aq. phase emulsion [org. phase composed of II, III, EtCN, IV, and H2O; aq. phase contg. (Et4N)2SO4]. After electrolysis for 2000 h,				
III and IV were produced in 89% and 7.0% yield, resp. Then, III was removed from the electrolytic soln. by distn. in 82% removal ratio to give a high b.p. residue contg. 1.38% III, which was applied to mol. distn. to give a distillate contg. 96.0% IV. Then, the distillate was autoclaved in the presence of Raney Co and H2O under H at 150.degree. for 180 min to give 69% I (based on IV).				
IT 1772-25-4P, 1,3,6-Hexanetricarbonitrile RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (prep'n. and hydrogenation of, in presence of Raney catalysts)				
RN 1772-25-4 CAPLUS CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)				

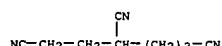


L4 ANSWER 12 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1991:417462 CAPLUS  
 DOCUMENT NUMBER: 115:17462  
 TITLE: Effect of surfactants on the electroreduction of acrylonitrile  
 AUTHOR(S): Jitaru, Oniciu, Liviu; Silberg, Ioan A.; Lowy, Dan A.; Maria; Ciosos, Florentina; Oprea, Ovidiu Horea; Toma, Bogdan C.; Toma, Mariana  
 CORPORATE SOURCE: Dep. Phys. Chem., Univ. Cluj-Napoca, Cluj-Napoca, Rom  
 SOURCE: Revue Roumaine de Chimie (1990), 35(7-9), 859-66  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Comparative expts. of acrylonitrile electroredn. on Pb vs. PbO2 electrodes in neutral phosphate buffer, with - or without cationic surfactants demonstrated that the selectivity of the process is essentially under the control of the quality and quantity of the quaternary ammonium salt added. Thus, in the absence of surfactants, the process is directed towards the non-dimerizant electroredn. leading with high selectivity to propionitrile. Whereas at levels of about ten times the crit. micellar concn. the surfactant ensures a preponderant formation of the electrohydrodimerization products: adiponitrile and traces of methylglutaronitrile. At the same time, the phase transfer catalysis effect exerted by the surfactant entails, besides a favorable influence on the dimerizant electroredn., an increased formation of water cyanoethylation products.  
 IT 1772-25-4P, 1,3,6-Tricyanohexane  
 RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, as impurity, in electrochem. redn. of acrylonitrile in presence of alkyltrimethylammonium surfactant)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 14 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1988:592566 CAPLUS  
 DOCUMENT NUMBER: 109:192566  
 TITLE: Selective process for epoxidation of styrene to styrene oxide  
 INVENTOR(S): Barbe, Claude Edouard; Golitsch, Maria de Lourdes;  
 PATENT ASSIGNEE(S): Alkawa, Lumi Tsuchiya  
 SOURCE: Rhodia S. A., Brazil  
 CODEN: BPXXDX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Portuguese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

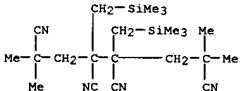
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BR 8500801	A	19860923	BR 1985-801	19850215
PRIORITY APPLN. INFO.:			BR 1985-801	
AB Styrene oxide is prep'd. in high yields by the epoxidn. of styrene with H2O2 in the presence of a nitrile (0.3-1.35 mol/mol styrene) in an alc. medium maintained at pH 8.8-10.0 by adding an eq. alkali metal hydroxide soln. Suitable nitriles are the 1,3,6-tricyanohexane-contg. byproduct of the manuf. of adiponitrile and byproducts of the manuf. of acrylonitrile.				
IT 1772-25-4 RL: USES (Uses) (in styrene oxide manuf. from styrene)				
RN 1772-25-4 CAPLUS CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)				



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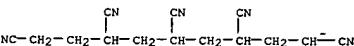
L4 ANSWER 15 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1988:37904 CAPLUS  
 DOCUMENT NUMBER: 108:37904  
 TITLE: Chemistry of organosilicon compounds. 226.  
 (2-Cyanoallyl)trimethylsilane and (2-cyanoethyl)trimethylsilane. Unique .sigma..pi. captodative systems  
 AUTHOR(S): Sakurai, Hideki; Kyushin, Soichiro; Nakadaira, Yasuhiro  
 CORPORATE SOURCE: Fac. Sci., Tohoku Univ., Sendai, 980, Japan  
 SOURCE: Chemistry Letters (1987), (2), 297-300  
 CODEN: CMLTAG; ISSN: 0366-7022  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 108:37904  
 AB Addn. reactions of (2-cyanoallyl)trimethylsilane (I) as well as hydrogen abstraction reactions of (2-cyanoethyl)trimethylsilane (II) were exampd. These compds. exhibit high reactivities in free-radical reactions, demonstrating existence of the .sigma..pi. captodative effect. Thus, pyrolysis of I in a sealed tube yielded only Me3SiCH2CH(CN)CH2CH2C(CN):CHSiMe3 and no cyclobutan deriv., as is the fate of the intermediate radical formed from pyrolysis of acrylonitrile. A significant .sigma..pi. captodative effect stabilized the intermediate radical formed from I preventing ring closure under the exptl. conditions. Competitive bromination reactions of II and related substrates, including NCCH2R (R = Me, Ph, SMe, OMe, OC2Me2) and NCCHMe2, with NBS were performed to evaluate the relative stabilities of intermediate radicals formed during the hydrogen abstraction. The SMe group is an exceptionally strong donor in the captodative effect for stabilization of the radical and Me and O2CMe are weak donors. The MeSiCH2, MeO, and Ph groups are of medium donor ability.

IT 112313-58-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prep. of, from dimerization of (cyanoallyl)trimethylsilyl radical)  
 RN 112313-68-5 CAPLUS  
 CN 2,4,5,7-Octanetetracarbonitrile, 2,7-dimethyl-4,5-bis(trimethylsilyl)methyl- (9CI) (CA INDEX NAME)



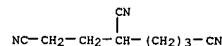
L4 ANSWER 17 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1982:180673 CAPLUS  
 DOCUMENT NUMBER: 96:180673  
 TITLE: Anionic telomerization of acrylonitrile initiated by -CH2CN in the gas phase  
 AUTHOR(S): McDonald, Richard N.; Chowdhury, A. Kasem  
 CORPORATE SOURCE: Dep. Chem., Kansas State Univ., Manhattan, KS, 66506, USA  
 SOURCE: Journal of the American Chemical Society (1982), 104(9), 2675-6  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The title process involved the sequence NCCH2- + CH2:CHCN .fwdarw. m/z 93 .fwdarw. m/z 146 .fwdarw. m/z 199 .fwdarw. m/z 252. Termination of the telomerization occurred at the tetrameric anion, and apparently resulted from intramol. ion-dipole assocn. of the anion growing end, -CHN-, with 2 cyano groups on the telomer backbone. The data were simulated by computer, yielding the rate consts. for each step and an upper limit for the further telomerization of the tetrameric anion.

IT 81388-06-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prep. of)  
 RN 81388-06-9 CAPLUS  
 CN 1,3,5,7,9-Nonanepentacarbonitrile, ion(1-) (9CI) (CA INDEX NAME)



L4 ANSWER 16 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1987:184858 CAPLUS  
 DOCUMENT NUMBER: 106:184858  
 TITLE: Selectivity characteristics of the electrohydrodimerization of acrylonitrile  
 AUTHOR(S): Scott, K.; McConvey, I. F.; Henderson, J.  
 CORPORATE SOURCE: Dep. Chem. Eng., Teesside Polytech., Middlesbrough/Cleveland, TS1 3BA, UK  
 SOURCE: Journal of Applied Electrochemistry (1987), 17(2), 329-339  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB A math. model of a reaction scheme for the electrohydrodimerization of acrylonitrile to adiponitrile in a loop reactor is presented. This model, which is based on a plug flow reactor with a recycle loop and continuous removal of the product, is used to simulate steady-state operation at various operating conditions. The effect of flow rate, c.d. and mass transport were investigated in terms of their effect on product distributions and selectivity. Overall, the reaction model deals with the formation of 5 products from the cathodic reactions.

IT 1772-25-4, 1,3,6-Tricyanohexane  
 RL: PROC (Process)  
 (transformation of, in electrohydrodimerization of acrylonitrile, math. model for)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

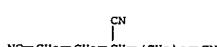


L4 ANSWER 18 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1981:514820 CAPLUS  
 DOCUMENT NUMBER: 95:114820  
 TITLE: Adiponitrile from 1,3,6-tricyanohexane  
 PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE  
 JP 56040656 A2 19810416 JP 1979-116687 19790913  
 JP 62015068 B4 19870406

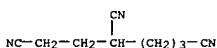
PRIORITY APPN. INFO.: JP 1979-116687 19790913  
 AB Adiponitrile (I) was recovered from pyrolysis of 1,3,6-tricyanohexane (II) at 300-420.degree. in the liq. phase or at 400-600.degree. in the gas phase with or without a catalyst. Thus, silica gel contg. 1.5% NaOH was pelletized with bentonite, packed into a glass tube, and treated with 2 g II/h-mL catalyst at 450.degree./20-40 mm to give 53.6% I and 49.9% acrylonitrile with 81.9% conversion. K2CO3, MgO, KOH, KCN, Pt, V2O5, or Cr2O3 was also used.

IT 1772-25-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (pyrolysis of, adiponitrile from)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



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L4 ANSWER 19 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACESSION NUMBER: 1979:465194 CAPLUS  
 DOCUMENT NUMBER: 91:65194  
 TITLE: The Phillip's process for the  
 electrohydrodimerization  
 of acrylonitrile  
 AUTHOR(S): Childs, W. V.; Walters, H. C.  
 CORPORATE SOURCE: Phillips Pet. Co., Bartlesville, OK, 74004, USA  
 SOURCE: AIChE Symposium Series (1979), 75(185), 19-25  
 CODEN: ACSQSC; ISSN: 0065-8812  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The Phillip's' electrochemical process for converting acrylonitrile to adiponitrile employs an undivided cell with Pb electrodes and offers lower investment and lower energy costs compared to other similar processes. The electrolysis cell used in the process is described. The electrolyte is K phosphate with a trace of Bu<sub>4</sub>N+. The yield of adiponitrile depended on acrylonitrile level pH, tetraalkylammonium concn. and compn., electrolyte concn., c.d., and linear flow rate in the cell. The optimized efficiency was >90% which is comparable to other electrohydrodimerization processes. The terminal voltage was 4.0 V at 2 KA/m<sup>2</sup> and 50.degree..  
 IT 1772-25-4P  
 RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, in acrylonitrile electrohydrodimerization)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

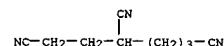


L4 ANSWER 20 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACESSION NUMBER: 1979:88043 CAPLUS  
 DOCUMENT NUMBER: 90:88043  
 TITLE: Thermal conversion of 4-cyano-suberonitrile to  
 acrylonitrile  
 INVENTOR(S): Campbell, Charles R.; Heckle, William A.; Mathews,  
 Marion J.  
 PATENT ASSIGNEE(S): Monsanto Co., USA  
 SOURCE: U.S. PP  
 CODEN: USAXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

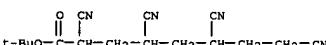
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4128571	A	19781205	US 1977-846100	19771027

PRIORITY APPLN. INFO.: US 1977-846100 19771027  
 AB 4-Cyanoacrylonitrile (I) [1772-25-4] is continuously converted to acrylonitrile (II) [107-13-1] in a catalyst-free reaction at 700-800.degree. and vol. hourly space velocity (VHSV) 2600-8000. Thus, a mixt. of I 70.5, adiponitrile 2.5, and other materials 27.5 was fed into a 10 ft .times. 0.25 in. stainless steel tube at 750.degree. and VHSV 2632 (contact time 1.37 s) to give 30.9% II. Optionally, the feed mixt. can contain 1 to >2 parts propionitrile [107-12-0] diluent per part of the above feed mixt.

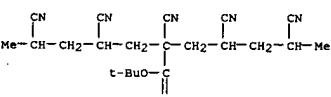
IT 1772-25-4  
 RL: PROC (Process)  
 (thermal conversion of, to acrylonitrile, noncatalytic)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 21 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACESSION NUMBER: 1978:23446 CAPLUS  
 DOCUMENT NUMBER: 88:23446  
 TITLE: Synthesis of polyacrylonitrile oligomers. II.  
 Saturated oligomers  
 AUTHOR(S): Balard, Henri; Meybeck, Jean  
 CORPORATE SOURCE: Lab. Chim. Org. Ind., CNRS, Mulhouse, Fr.  
 SOURCE: European Polymer Journal (1977), 13(7), 617-21  
 CODEN: EUPJAG; ISSN: 0014-3057  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French  
 AB Eleven compds. RCH(CN)[CH2CH(CN)nR1 (I) were prep'd. from the unsatd. CH2:CHCN oligomers. The unsymmetric compds. I (R = Me, R1 = H; n = 1-3), e.g. MeCH(CN)[CH2CH(CN)]3H [64918-23-6] were prep'd. by hydrogenation of CH2:C(CN)[CH2CH(CN)]nR and condensation of 1 or 2 mols. unsatd. oligomer with tert-Bu cyanocetate [1116-98-9] followed by pyrolysis gave I (R = R1 = Me; R = R1 = H; n = 1-4), e.g. MeCH(CN)[CH2CH(CN)]2Me [17199-93-8] and CH2(CN)[CH2CH(CN)]2H [4379-04-8].  
 IT 64918-26-9P 64918-28-1P 64918-30-5P  
 64936-51-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and pyrolysis of)  
 RN 64918-26-9 CAPLUS  
 CN Octanoic acid, 2,4,6,8-tetracyano-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

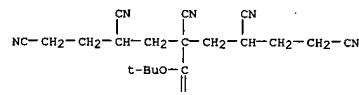


RN 64918-28-1 CAPLUS  
 CN Heptanoic acid, 2,4,6-tricyano-2-(2,4-dicyanopentyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

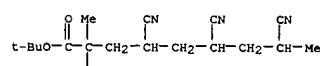


RN 64918-30-5 CAPLUS  
 CN Hexanoic acid, 2,4,6-tricyano-2-(2,4-dicyanobutyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

L4 ANSWER 21 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)



RN 64936-51-2 CAPLUS  
 CN Nonanoic acid, 2,4,6,8-tetracyano-2-methyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



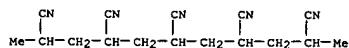
IT 64000-86-8P 64000-87-9P 64918-23-6P

64918-24-7P 64918-25-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

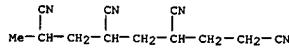
RN 64000-86-8 CAPLUS  
 CN 2,4,6,8-Nonanetetracarbonitrile (7CI, 9CI) (CA INDEX NAME)



RN 64000-87-9 CAPLUS  
 CN 2,4,6,8,10-Undecanepentacarbonitrile (9CI) (CA INDEX NAME)



RN 64918-23-6 CAPLUS  
 CN 1,3,5,7-Octanetetracarbonitrile (9CI) (CA INDEX NAME)

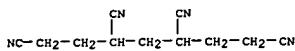


RN 64918-24-7 CAPLUS  
 CN 1,3,5,7-Heptanetetracarbonitrile (6CI, 9CI) (CA INDEX NAME)

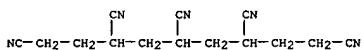
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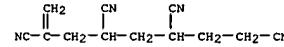
L4 ANSWER 21 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)



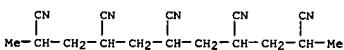
RN 64918-25-8 CAPLUS  
CN 1,3,5,7,9-Nonanepentacarbonitrile (9CI) (CA INDEX NAME)



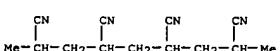
L4 ANSWER 22 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 1978:7439 CAPLUS  
DOCUMENT NUMBER: 88:7439  
TITLE: Synthesis of polyacrylonitrile oligomers. I.  
AUTHOR(S): Unsaturated oligomers  
Balard, Henri; Meybeck, Jean  
CORPORATE SOURCE: Lab. Chim. Org. Ind., CNRS, Mulhouse, Fr.  
SOURCE: European Polymer Journal (1977), 13(7), 611-15  
CODEN: EUPJAG; ISSN: 0014-3057  
DOCUMENT TYPE: Journal  
LANGUAGE: French  
AB Five oligomers CH<sub>2</sub>:CCN(CH<sub>2</sub>CHCN)<sub>n</sub>R (R = H or Me, n = 1-3), e.g. 2,4-dicyano-1-pentene [35299-21-9], were prep'd. by Bu<sub>3</sub>P catalyzed anionic oligomerization of acrylonitrile [107-13-1] and by Feit's iterative method. The 2 synthesis methods were discussed and the products were characterized by chromatog. and IR and NMR spectroscopy.  
IT 64918-32-7  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)  
RN 64918-32-7 CAPLUS  
CN 7-Octene-1,3,5,7-tetracarbonitrile (9CI) (CA INDEX NAME)



L4 ANSWER 23 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 1977:518331 CAPLUS  
DOCUMENT NUMBER: 87:118331  
TITLE: Determination of the tacticity of polyacrylonitrile and its oligomers by carbon-13 NMR spectroscopy  
AUTHOR(S): Balard, Henri; Fritz, Hans; Meybeck, Jean  
CORPORATE SOURCE: Lab. Chim. Org. Ind., Ec. Super. Chim., Mulhouse, Fr.  
SOURCE: Makromolekulare Chemie (1977), 178(8), 2393-9  
CODEN: MACAEK; ISSN: 0025-116X  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB The microtacticity of polyacrylonitrile (I) [25014-41-9] and its model compds., the dimer [15074-49-4], trimer [17199-93-8], and tetramer [64000-86-8] of acrylonitrile were detd. by <sup>13</sup>C NMR spectroscopy. In the case of the oligomers, the carbons of the chain are the most stereosensitive ones, but for I the carbon of the cyano group was the most stereosensitive. The <sup>13</sup>C NMR spectrum of I was composed of 10 peaks which can be assigned to the 10 possible pentad configurations. The <sup>13</sup>C NMR technique allows for the direct estn. of the relative concns. of the different isomers in a mixt. and is, therefore, the best spectroscopic technique for controlling the efficiency of the methods used to sep. oligomer diastereoisomers.  
IT 64000-87-9  
RL: PRP (Properties)  
(NMR of)  
RN 64000-87-9 CAPLUS  
CN 2,4,6,8,10-Undecanepentacarbonitrile (9CI) (CA INDEX NAME)

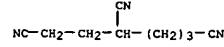


IT 64000-86-8  
RL: PRP (Properties)  
(tacticity of, detn. of, by carbon-13 NMR)  
RN 64000-86-8 CAPLUS  
CN 2,4,6,8-Nonenetetracarbonitrile (7CI, 9CI) (CA INDEX NAME)



L4 ANSWER 24 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 1976:45883 CAPLUS  
DOCUMENT NUMBER: 84:45883  
TITLE: Acrylic fibers  
INVENTOR(S): Shimizu, Kunitoshi; Iwasa, Toshio; Seki, Shuji  
PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 50111148	A2	19750901	JP 1974-13621	19740204
PRIORITY APPLN. INFO.: JP 1974-13621 19740204				
AB Melt spinning blends contg. an acrylic polymer [contg. mainly acrylonitrile (I) units] and a I trimer, e.g., 1,3,6-tricyanohexene (II) [1772-25-4], or mixts. of oligomeric polyacrylonitrile [25014-41-9] contg. the trimer gave fibers with increased tensile strength. Thus, a mixt. contg. I 95, Me acrylate (III) 5, II 80, and tert-Bu peroxypivalate 1.5 parts was polymd. 10 hr at 70.degree. to give a polymer (IV) [24968-79-4] mixt. IV mixt. (contg. 43% II) was spun at 169.degree. and the spun fibers were drawn 200% in H <sub>2</sub> O at 100.degree. and heated 1 min at 135.degree. to give 2.7-denier/filament fibers with tenacity 4.81 g/denier and elongation 13.5%. Vinyl acetate-I copolymer [24980-62-9], Me methacrylate-I copolymer [30396-85-1], Na allylsulfonate-I-III copolymer [25053-78-5], 2-vinylpyridine-I copolymer [26836-60-2], and vinylidene chloride-I copolymer [9010-76-8] were also used.				
IT 1772-25-4				
RL: USES (Uses) (blends with acrylic polymers, spinning of, for increased tensile strength)				
RN 1772-25-4 CAPLUS				
CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)				



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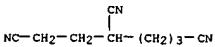
L4 ANSWER 25 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1976:32541 CAPLUS  
 DOCUMENT NUMBER: 84:32541  
 TITLE: Pilling-resistant acrylic fabrics  
 INVENTOR(S): Shimizu, Kunitoshi; Iwase, Toshimi; Seki, Shuji  
 PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 5011400	A2	19750902	JP 1974-17129	19740214
			JP 1974-17129	19740214

PRIORITY APPLN. INFO.: AB Finishing acrylic fabrics with aq. compns. contg. 1,3,6-tricyanohexane  
 (I)  
 [1772-25-4] or 1-3-cyanomethyl-1,5-dicyanopentane (II)  
 [16466-63-0] and optionally contg. oligomeric polyacrylonitrile  
 [25014-41-9] gave fabrics with increased resistance to pilling. Thus,  
 bulky Cashmilon (acrylic fibers) yarns were immersed in an aq. mixt.  
 contg. I-II at 40.degree., padded to 3% pickup, dried, dyed, and finished  
 with a softening agent. The pilling resistance rating (I. C. I. pilling  
 tester) for a fabric knitted from the resulting yarns was 4.5, compared  
 with 1.5 for a fabric knitted from the untreated yarns.  
 Acrylonitrile-methyl acrylate-sodium p-styrenesulfonate copolymer  
 [27103-73-7] was also used.

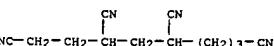
IT 1772-25-4  
 RL: USES (Uses)  
 (finishing agents, for acrylic fabrics, for increased pilling  
 resistance)

RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

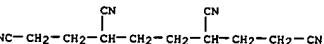


L4 ANSWER 27 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1969:480616 CAPLUS  
 DOCUMENT NUMBER: 71:80616  
 TITLE: Electrolytic reductive oligomerization of  
 acrylonitrile and related olefins  
 AUTHOR(S): Baizer, Manuel M.  
 CORPORATE SOURCE: Cent. Res. Dep., Monsanto Co., St. Louis, MO, USA  
 SOURCE: World Petrol. Congr., Proc., 7th (1968), Meeting Date  
 1967, Volume 5, 311-16. Elsevier Publ. Co. Ltd.:  
 Barking, Engl.  
 CODEN: 21GN46  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English  
 AB The electrolytic reductive oligomerization of concd. solns. of  
 acrylonitrile in hydroscopic electrolytes has been studied over a  
 range of H2O concns. At high H2O content, propionitrile is the main  
 redn. product; at intermediate concns., almost quant. yields of adiponitrile  
 are obtained; in nearly anhyd. media hydrotrimer, hydrotetramer as well as  
 low-melting acrylonitrile polymers are formed. The probable  
 mode of formation of this range of products is discussed. Electrolytic  
 reductive dimerization was extended to include all monomeric activated  
 olefins in which the activating group is itself not reduced; higher  
 oligomerization was sought for and demonstrated in only a limited number  
 of cases. The acrylonitrile dimer, alpha,-  
 methylene glutaronitrile, underwent electrolytic reductive dimerization to  
 yield an acrylonitrile hydrotetramer and mixed reductive  
 coupling with acrylonitrile to yield acrylonitrile  
 hydrotomer. The formation of oligomers from acrylonitrile on  
 treatment with catalytic quantities of tertiary phosphines is discussed.  
 The relevant literature on non-electrolytic methods for oligomerizing  
 activated olefins is cited.

IT 1572-42-5P 1572-43-6P 1772-25-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prep. of)  
 RN 1572-42-5 CAPLUS  
 CN 1,3,5,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)

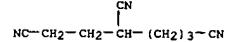


RN 1572-43-6 CAPLUS  
 CN 1,3,6,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)

L4 ANSWER 26 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1972:85349 CAPLUS  
 DOCUMENT NUMBER: 76:85349  
 TITLE: Identification of high-boiling impurity in  
 adiponitrile, obtained from acrylonitrile  
 AUTHOR(S): Usova, E. P.; Upadysheva, A. V.; Mitina, L. I.;  
 Grigor'eva, N. D.; Zharnenskaya, A. P.  
 CORPORATE SOURCE: USSR  
 SOURCE: Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian  
 Federation) (1971), 44(11), 2598-9  
 CODEN: ZPKHAB; ISSN: 0044-4618  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB 1,3,6-Tricyanohexane (I) was sepd. from adiponitrile by preparative  
 liq. chromatog. on Al2O3. I was also obtained by heating 1-amino-2-cyano-1-  
 cyclopentene and acrylonitrile in CS2 with a catalytic amt. Na  
 6-8 hr at 80.degree..  
 IT 1772-25-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (as impurity in adiponitrile)  
 RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 27 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)  
 NC- $\overset{\text{CN}}{\underset{|}{\text{CH}}}$ -CH<sub>2</sub>-CH-(CH<sub>2</sub>)<sub>3</sub>-CN

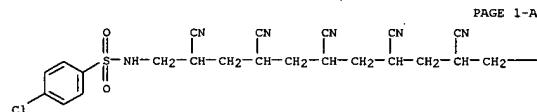
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L4 ANSWER 28 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1969:439500 CAPLUS  
 DOCUMENT NUMBER: 71:39500  
 TITLE: Telomerization of acrylonitrile by  
 N,N-dichloro-p-chlorobenzenesulfonamide  
 AUTHOR(S): Rybakova, N. A.; Freidlina, R. Kh.  
 CORPORATE SOURCE: Inst. Elementoorg. Soedin., Moscow, USSR  
 SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya  
 (1969), (5), 1194-5  
 CODEN: IASKA6; ISSN: 0002-3353  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB Heating 13 g. p-ClC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NCI<sub>2</sub> with 5.3 g. CH<sub>2</sub>:CHCN and 1.43 g. dicyclohexyl peroxydicarbonate in CC<sub>14</sub> under N at 60-5.degree. for 1.5 hrs. gave a solid, which after washing with more CC<sub>14</sub> gave after treatment with EtOH 1.9 g. sol. C<sub>2</sub>H<sub>4</sub>Cl<sub>2</sub>Cl<sub>2</sub>N<sub>2</sub>O<sub>2</sub>S, m. 135-40.degree., and alc.-insol. material that was not identified. The sol. fractions were fractionated from CC<sub>14</sub> to yield 2.8 g. p-ClC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NH<sub>2</sub>CH<sub>2</sub>ClCN and 2.5 g. p-ClC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NH<sub>2</sub>CCl(CN)Cl, m. 68.degree., and mixed analogous telomers with 3-5 links of the acrylonitrile component, which were not sepd. From other similar runs with varying proportions of starting materials were isolated similar telomers from n = 1 to n = >6. The following were isolated in the pure state: p-ClC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NH<sub>2</sub>CH<sub>2</sub>(CN)nCl; n = 7, decompd. 150-8.degree.; n = 9, decompd. 190-200.degree.; n = 14, decompd. 205-15.degree.. IR spectra are reported.

IT 24729-16-6P 24729-17-7P 24729-18-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

RN 24729-16-6 CAPLUS  
 CN Benzenesulfonamide,  
 p-chloro-N-(12-chloro-2,4,6,8,10,12-hexacyanododecyl)-  
 (8CI) (CA INDEX NAME)

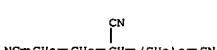


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RN 24729-17-7 CAPLUS  
 CN Benzenesulfonamide, p-chloro-N-(14-chloro-2,4,6,8,10,12,14-heptacyanotetradecyl)- (8CI) (CA INDEX NAME)

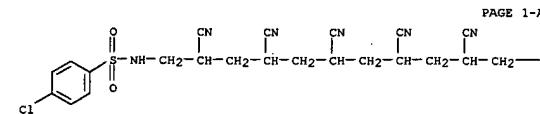
L4 ANSWER 29 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1968:96360 CAPLUS  
 DOCUMENT NUMBER: 68:96360  
 TITLE: Polyacrylonitrile  
 INVENTOR(S): Baizer, Manuel M.  
 PATENT ASSIGNEE(S): Monsanto Co.  
 SOURCE: U.S., 6 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3375237	A	19580326	US 1964-422431	19641230
PRIORITY APPLN. INFO.:			US 1964-422431	19641230
AB Division of U.S. 3,245,889 (CA 64: 19920d). The disclosure is similar, but the claims are different.				
IT 1772-25-4P	RL: PREP (Preparation) (prepn. of)			
RN 1772-25-4 CAPLUS	CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)			



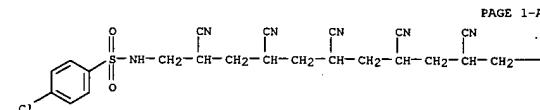
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L4 ANSWER 28 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)



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RN 24729-18-8 CAPLUS  
 CN Benzenesulfonamide, p-chloro-N-(18-chloro-2,4,6,8,10,12,14,16,18-nonacyanooctadecyl)- (8CI) (CA INDEX NAME)



PAGE 1-B

L4 ANSWER 30 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1967:76086 CAPLUS  
 DOCUMENT NUMBER: 66:76086

TITLE: Reaction of phosphinous acid esters with acrylonitrile  
 AUTHOR(S): Dietsche, W. H.  
 CORPORATE SOURCE: Shell Grundlagenforsch. Ges., Schloss Birlinghoven, Siegburg, Germany  
 SOURCE: Tetrahedron Letters (1966), (51), 6347-51  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 AB Mixts. of H<sub>2</sub>C:CHCN and various diaryl and arylalkyl phosphinites, RR<sub>1</sub>POR<sub>2</sub> (I) in Me<sub>3</sub>COH contg. 50 mg. hydroquinone stirred (N atm.) became intensely yellow and after a short induction period reacted exothermically to reflux temp. with sepn. of a cryst. hexamer (II) and oily polymers. After cessation of the exothermic reaction in 1-2 hrs. the mixt. was filtered and the filtrate distd. to yield unreacted H<sub>2</sub>C:CHCN, a crude fraction of 2

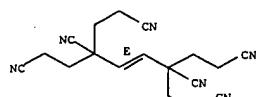
acrylonitrile dimers and phosphinite secondary products. Extn. with MeCN sepnd. II from the polymers. The % yields of II, dimers, and polymers were tabulated. Whereas in the absence of solvent extremely vigorous polymer. to a brown resin occurred, in the presence of Me<sub>3</sub>COH the reaction gave 6.2-41.3% yields of II, i.e., 1,1,4-tetrakis(2-cyanoethyl)-1,4-dicyano-trans-2-butene, m. 241-3.degree. (HC<sub>10</sub>N<sub>2</sub>-MeCN). I (R = R<sub>1</sub> = p-MeC<sub>6</sub>H<sub>4</sub>, R<sub>2</sub> = Et) and I (R = R<sub>1</sub> = Ph, R<sub>2</sub> = Et) gave the 28% yields with small amts. of polymer, whereas I (R = R<sub>1</sub> = Ph, R<sub>2</sub> = CH<sub>2</sub>CMe<sub>3</sub>) and I (R = Ar, R = alk., R = Et) gave much polymer with practically complete conversion of H<sub>2</sub>C:CHCN. All diarylphosphinites independent of the ester groups in the presence of Me<sub>3</sub>COH gave a quant. yield of Ar<sub>2</sub>D(O)CH<sub>2</sub>CH<sub>2</sub>CN: Ar = Ph, m. 102-3.degree. (C<sub>6</sub>H<sub>6</sub>), b0.02 215-19.degree., M<sub>w</sub> 255, and Ar = p-MeC<sub>6</sub>H<sub>4</sub>, b0.5 240.degree., M<sub>w</sub> 283. Ph<sub>2</sub>PSEt and Ph<sub>2</sub>POPh gave no oligomerization with H<sub>2</sub>C:CHCN. The reaction of Ar<sub>2</sub>POR with H<sub>2</sub>C:CHCN took place in accordance with the mechanism proposed by Takashina and Price (CA

56, 14075b).

IT 15590-02-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

RN 15590-02-0 CAPLUS  
 CN 4-Octene-1,3,6,8-tetracarbonitrile, 3,6-bis(2-cyanoethyl)-, (E)- (8CI) (CA INDEX NAME)

Double bond geometry as shown.



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L4 ANSWER 31 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1966:105396 CAPLUS  
 DOCUMENT NUMBER: 64:105396  
 ORIGINAL REFERENCE NO.: 64:19920d-h  
 TITLE: Electrolytic polymerization of acrylonitrile  
 INVENTOR(S): Baizer, Manuel M.  
 PATENT ASSIGNEE(S): Monsanto Co.  
 SOURCE: 6 PP  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3245889		19660412	US	19630225

AB Polymers of low mol. wt. are prep'd. by controlled electrolysis of catholytes which are concd. solns. contg. acrylonitrile (I), and electrolyte salt, and a compd. that provides a relatively low concn. of protons. The process is generally carried out in the absence of free-radical-generating catalysts and of anions (except carbanions formed in the reaction) capable of catalyzing anionic polymerization of I. Inhibitors of free-radical catalysis may be present. Polymerization proceeds as a result of addn. of 2 electrons to a mol. of I to form a dianion, which then reacts with addnl. I to give a cross-linked configuration. Termination of the polymerization process may be accomplished by increasing the concn. of protons, which add to the carbanion chains and inhibit further reaction. Aryl- and alkarenenesulfonic acid salts are esp. suitable for use in anolyte solns., which are sep'd. from the cathodic half-cell by a semipermeable membrane or divider. For example, in a jacketed glass vessel contg. 110 ml. Hg as the cathode, a catholyte was placed consisting of a soln. of I (contg. a trace of p-nitrosodimethylamine) 23.1, tetraethylammonium p-toluenesulfonate

(II) 25, HCONMe<sub>2</sub> (III) 82.3, and H<sub>2</sub>O 2.6 g. An Alundum cup immersed in the catholyte contained 15 ml. of 80 wt. % II dild. with 5 ml. H<sub>2</sub>O as the anolyte. A Pt anode was immersed in the anolyte. The anode and cathode were connected, resp., to the pos. and neg. terminals of a d.c. source.

A current of 0.1-0.5 amp. at a cathode voltage of -1.5 to -1.6 (vs. a satd. HgCl<sub>2</sub> electrode) was passed through the cell for a few min. with no apparent reaction. The voltage was then increased to cause a 1.4-amp. current to flow (at -1.85 v.), and the catholyte temp. rose to >40.degree.. Electrolysis was discontinued after 1.45 amp.-hrs. and the catholyte was dild. with 300 ml. cold H<sub>2</sub>O. The resulting polymer was collected by filtration, washed with H<sub>2</sub>O, and dried to a wt. of 13.1 g. The product (m. 115-40.degree. osmometric mol. wt. 714) contained C

66.24, H 6.20, and N 25.15%, indicating a mol. of approx. 14 units of I with the formula H(C<sub>3</sub>H<sub>3</sub>N)<sub>14</sub>H. It was sol. in MeCO, acetonitrile (IV), concd.

HCl, and Ac<sub>2</sub>O. When the procedure of the above example was repeated with IV instead of III as cosolvent, the polymer formed did not sep. from the aq. bath, indicating that IV and H<sub>2</sub>O, together in the catholyte, furnished sufficient protons to terminate polymerization at a very early stage.

L4 ANSWER 32 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN

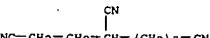
ACCESSION NUMBER: 1966:104097 CAPLUS  
 DOCUMENT NUMBER: 64:104097  
 ORIGINAL REFERENCE NO.: 64:19568h,19569a  
 TITLE: Nicotinic acid  
 INVENTOR(S): Baizer, Manuel M.  
 PATENT ASSIGNEE(S): Monsanto Co.  
 SOURCE: 3 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3246000		19660412	US	19631218

AB A process is described for the prepn. of nicotinic acid (I) from acrylonitrile (II). Thus, electrolysis of a catholyte of 60 g. tetrtaethylammonium p-toluenesulfonate, 3 g. H<sub>2</sub>O, and 160 g. II and an anolyte of 30 ml. 82% methyltributylammonium methylsulfate in 20 ml. H<sub>2</sub>O with 1.5-2.0 amp. for 3.5 amp.-hrs., the mixt. dild. with H<sub>2</sub>O, extd. with CH<sub>2</sub>Cl<sub>2</sub>, and the ext. fractionated to give as one fraction 1,3,6-tricyanohexane (III), b<sub>0</sub>.2 186-200.degree.. III was heated 24 hrs. at 150.degree. and 3000 psi. with Raney Co and H, the mixt. distd. to give 1,8-diamino-4-aminomethyloctane (IV), b<sub>0</sub>.2-0.25 98.5-103.0.degree., n<sub>27D</sub> 1.4822 and a small amt. of 3-(4-aminobutyl)piperidine (V), di-HCl salt m. 228.8-30.0.degree.. Hydrogenation of IV in the presence of NH<sub>3</sub> gave V. Acetylation of V with Ac<sub>2</sub>O followed by dehydrogenation with 10% Pd on C at 200.degree. gave 3-(4-acetylaminobutyl)pyridine (VI). Oxidn. of VI with HNO<sub>3</sub> gave I.

IT 1772-25-4, 1,3,6-Hexanetricarbonitrile  
 (prep'n. of)

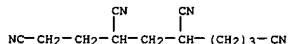
RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



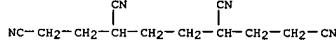
L4 ANSWER 31 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)  
 Polymers suitable for low-temp. molding and coating operations can be prepd. in this way.

IT 1572-42-5, 1,3,5,8-Octanetetracarbonitrile 1572-43-6,  
 1,3,6,8-Octanetetracarbonitrile 1772-25-4, 1,3,6-Hexanetricarbonitrile  
 (formation in acrylonitrile soln. electrolysis)

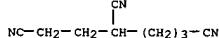
RN 1572-42-5 CAPLUS  
 CN 1,3,5,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



RN 1572-43-6 CAPLUS  
 CN 1,3,6,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



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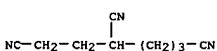
L4 ANSWER 33 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)  
 mixt. was dild. with 30 cc. CHCl<sub>3</sub> and heated 5 min. on the water bath yielded 4.7 g. yellow [MeO<sub>2</sub>C(NC)C(C(NH<sub>2</sub>)NHCH<sub>2</sub>)<sub>2</sub>, m. 284-8.degree. (decomp.)]. (R = R' = CO<sub>2</sub>Et) 2 (2 g. added to 4 g. H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>OH and the mixt. heated with stirring to soln., cooled, and dild. with 10 cc. H<sub>2</sub>O in portions, gave 1.3 g. III (R = R' = CO<sub>2</sub>Et, R' = CH<sub>2</sub>CH<sub>2</sub>OH), m. 107-8.degree. (C<sub>6</sub>H<sub>6</sub>). IV (20 g.) in 100 cc. 10% aq. NaOH kept 3 days at room temp. gave 2.2 g. CHCl<sub>3</sub>, the aq. phase neutralized with concd. HCl gave 2 g. unreacted IV; further acidification to pH 2 gave 3 g. brownish H<sub>2</sub>NCO(OH):C(CN)CO<sub>2</sub>Me, m. 110-12.degree. (xylene). VIII (11.8 g.), 65 cc. conc. H<sub>2</sub>SO<sub>4</sub>, and 150 cc. H<sub>2</sub>O treated with stirring during 0.5 min. at 10-15.degree. with 1.85 g. NaNO<sub>2</sub> in 15 cc. H<sub>2</sub>O yielded 4.85 g. Et<sub>2</sub>NHC(OH):C(CN)CO<sub>2</sub>Me, m. 127.5-28.5.degree. (ligroine, b. 80-90.degree., and then H<sub>2</sub>O). VII (15.6 g.) added as rapidly as possible to 300 cc. refluxing PhOEt and the mixt. refluxed 140 min. yielded 15.45 g. 3,5-diamino-4-carbomethoxypyrazole (IX), m. 231-2.degree.. IX stirred

0.5 hr. with excess BzCl in CS<sub>2</sub> gave 401 3-BzNH analog of IX, m. 185-6.degree. (MeOH). V (2 g.) in 8 cc. DMF treated with 1 cc. N<sub>2</sub>H<sub>4</sub>.H<sub>2</sub>O and then shaken with 30 cc. H<sub>2</sub>O yielded 1.2 g. 3-amino-4-carbethoxy-5-phenylpyrazole (X), m. 167-9.degree. (C<sub>6</sub>H<sub>6</sub>). X (2 g.) in 25 cc. 4N NaOH refluxed 2 hrs. yielded 1.1 g. 3-amino-5-phenylpyrazole, m. 126-7.degree. (Ac<sub>2</sub>O-ligroine or aq. MeOH).

IT 1772-25-4, 1,3,6-Hexanetricarbonitrile  
 (prep. of)

RN 1772-25-4 CAPLUS

CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 34 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1965:409760 CAPLUS  
 DOCUMENT NUMBER: 63:9760  
 ORIGINAL REFERENCE NO.: 63:1695d-e  
 TITLE: Electrolytic reductive coupling. VIII. Utilization  
 and

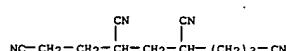
AUTHOR(S): Baizer, Manuel M.; Anderson, James D.  
 CORPORATE SOURCE: Monsanto Co., St. Louis, MO  
 SOURCE: Journal of Organic Chemistry (1965), 30(5), 1357-60  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB *alpha*-Methyleneglutaronitrile (I) has been electrolytically hydrodimerized to yield 1,3,6,8-tetracyanoctane (II). Electrolysis of a mixture of I and acrylonitrile yielded II and adiponitrile—the two hydro dimers—and 1,3,6-tricyanohexane, the product of mixed coupling. I and higher oligomers of acrylonitrile have been prepared by the reaction of acrylonitrile with catalytic quantities of tertiary phosphines in the presence of proton donors.

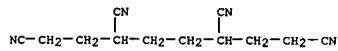
IT 1572-42-5, 1,3,5,8-Octanetetracarbonitrile 1572-43-6,  
 1,3,6,8-Octanetetracarbonitrile 1772-25-4, 1,3,6-  
 Hexanetricarbonitrile  
 (prep. of)

RN 1572-42-5 CAPLUS

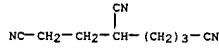
CN 1,3,5,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



RN 1572-43-6 CAPLUS  
 CN 1,3,6,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 35 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1965:409759 CAPLUS  
 DOCUMENT NUMBER: 63:9759  
 ORIGINAL REFERENCE NO.: 63:1695c-d  
 TITLE: Electrolytic reductive coupling. VII. A new class of acrylonitrile oligomers

AUTHOR(S): Baizer, Manuel M.; Anderson, James D.

CORPORATE SOURCE: Monsanto Co., St. Louis, MO

SOURCE: Journal of Organic Chemistry (1965), 30(5), 1351-6

CODEN: JOCEAH; ISSN: 0022-3263

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Previous work on the electrolysis of acrylonitrile in aq. quaternary ammonium salts under mildly alkaline conditions has been extended into the region of high acrylonitrile-water ratios. At very low water concns. acetone-soluble, relatively low-melting polyacrylonitriles of average mol. wt. 600-1300 are formed. From electrolysis of catholytes of intermediate (but still low) water content there were isolated an acrylonitrile hydro trimer, 1,3,6-tricyanohexane, and a mixt. of hydro tetramers, consisting of 1,3,6,8- and 1,3,5,8-tetracyanooctane. The structures of these new acrylonitrile oligomers were proved by conversion to and independent synthesis of the corresponding esters. The electrolytic hydropolymerization of acrylonitrile is viewed as proceeding from an initially formed *alpha*-adiponitrile dianion.

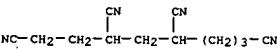
IT 1572-42-5, 1,3,5,8-Octanetetracarbonitrile 1572-43-6,

1,3,6,8-Octanetetracarbonitrile 1772-25-4, 1,3,6-

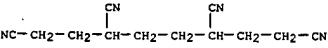
Hexanetricarbonitrile  
 (prep. of)

RN 1572-42-5 CAPLUS

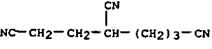
CN 1,3,5,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



RN 1572-43-6 CAPLUS  
 CN 1,3,6,8-Octanetetracarbonitrile (7CI, 8CI) (CA INDEX NAME)



RN 1772-25-4 CAPLUS  
 CN 1,3,6-Hexanetricarbonitrile (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 36 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1964:425859 CAPLUS  
 DOCUMENT NUMBER: 61:25859

ORIGINAL REFERENCE NO.: 61:4507d-e

TITLE: Coloration in acrylonitrile polymers

AUTHOR(S): Takata, Toshihiro; Hiroi, Iwao; Taniyama, Masakazu Tohru Rayon Co. Ltd., Tokushima, Japan

SOURCE: Journal of Polymer Science, Part A: General Papers (1964), 2(4), 1567-85

CODEN: JPAAK; ISSN: 0449-2951

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB The alkali and heat coloration of polyacrylonitrile (I) was investigated by using model compds. 2,4-Dicyanopentane, 2,4,6-tricyanohexane, and 2,4,6,8-tetracyanooctane were treated with alc. KOH, and the ultraviolet spectra showed that partly hydrogenated naphthyridine-type structures were

formed which supported the postulate of Grassie, et al. (G. and McNeill, CA 54, 16143a) for alkali-treated I. The intramol. ring closure mechanism

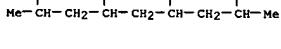
leading to a similar structure for heat-treated I, as proposed by Grassie,

et al., was also supported.

IT 64000-86-8, 2,4,6,8-Nonanetetracarbonitrile  
 (reaction with alc. KOH as model for discoloration of acrylonitrile polymers)

RN 64000-86-8 CAPLUS

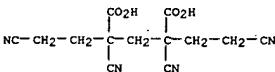
CN 2,4,6,8-Nonanetetracarbonitrile (7CI, 9CI) (CA INDEX NAME)



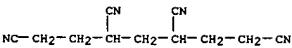
Kamal Saeed

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L4 ANSWER 37 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 1961:130746 CAPLUS  
DOCUMENT NUMBER: 55:130746  
ORIGINAL REFERENCE NO.: 55:24550b-d  
TITLE: Synthesis of 1,3,5,7-tetracyanoheptane  
AUTHOR(S): Vosburgh, W. C.; Green, D. L.  
CORPORATE SOURCE: E. I. du Pont de Nemours and Co., Inc., Wilmington, DE  
SOURCE: Journal of Organic Chemistry (1961), 26, 2118-19  
CODEN: JOCEAH; ISSN: 0022-3263  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
AB 1,3,5,7-Tetracyanoheptane (I) was synthesized as a short-chain model for the polyacrylonitrile moi. HCHO was added to cyanoacetic ester (II) to give di-Et .alpha., .alpha.-dicyanoglutarate (III); however, when the reaction temp. was not controlled, only Et .alpha.-cyanoacrylate was formed and it immediately polymerized to a low-mol.-wt. sticky polymer. Parafomaldehyde (60 g.) in 270 g. II treated during 4 hrs. With 4 ml.  
108 KOH in alc., after an addn. 2 hrs. heating the mixt. adjusted to pH 4, and distd. gave 206 g. III, b0.4-0.6 150.5-1.5.degree., n24D 1.4500, d24 1.1416. III (180 g.), 300 ml. dioxane, and 102 ml. acrylonitrile treated with 38.5 g. Triton X over 1 hr. at 30-5.degree. the soln. stirred 16 hrs., poured into H2O, acidified, and extd. gave 160 g. 1,3,5,7-tetracyano-3,5-di-carbethoxyheptane (IV). Crude IV (160 g.)  
mixed in 0.5 hr. with 84 g. KOH in 600 ml. MeOH and 400 ml. alc., the salt sepd., and washed gave 39 g. K .alpha.-dicyano-.alpha..alpha.-bis(.beta.-cyanoethyl)glutarate (V), m. 198-206.degree. (decompn.). V  
(30 g.) in 250 ml. AcOH kept 2.5 hrs. at 90-100.degree., evapd., the residue extd. with CH2Cl2, dried, and evapd. gave 4.5 g. I, m. 106-7.degree. (MeOH).  
IT 100725-15-3, Glutaric acid, 2,4-dicyano-2,4-bis(2-cyanoethyl)- (and derivs.)  
RN 100725-15-3 CAPLUS  
CN Glutaric acid, 2,4-dicyano-2,4-bis(2-cyanoethyl)- (6CI) (CA INDEX NAME)



IT 64918-24-7, 1,3,5,7-Heptanetetracarbonitrile  
(prepn. of)  
RN 64918-24-7 CAPLUS  
CN 1,3,5,7-Heptanetetracarbonitrile (6CI, 9CI) (CA INDEX NAME)



L4 ANSWER 38 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 1959:77452 CAPLUS  
DOCUMENT NUMBER: 53:77452  
ORIGINAL REFERENCE NO.: 53:13993c-1,13994a-f  
TITLE: Oligomers. XIII. The oligomers of acrylonitrile. 1. Syntheses  
AUTHOR(S): Zahn, Helmut; Schäfer, Paul  
CORPORATE SOURCE: Univ. Heidelberg, Germany  
SOURCE: Chemische Berichte (1959), 92, 736-44  
CODEN: CHBEAM; ISSN: 0009-2940  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
AB cf. A.C. 53, 13047c. MeCH(CN)CO2Et (30 g.) in 50 g. Me3COH treated dropwise with 13 g. CH2:CHCN after the addn. of 0.75 cc. 30% KOH in MeOH, the mixt. stirred 3 hrs. at 35.degree., neutralized with 2N HCl, dild. with 400 cc. H2O, extd. with Et2O, and the ext. distd. gave 22.9. MeC(CN)(CO2Et)CH2CH2CN (I), b0.1 114-16.degree.. I (9 g.) and 100 cc.  
48% HBr refluxed 8 hrs., evapd. in vacuo, the residue dissolved in H2O, extd. with Et2O, and the ext. dried and evapd. gave 6 g. HO2CCMe(CH2)2CO2H, m. 77.degree. (CGH6). I (20 g.) in 40 cc. refluxing EtOH treated dropwise with 6.2 g. KOH in 30 cc. EtOH, the mixt. filtered, the residue washed with abs. EtOH, the residual salt dried (18 g.) dissolved in a little H2O, the soln. treated with an equiv. amt. of concd. HCl, extd. with Et2O, and the ext. dried and evapd. left 13 g. oily, very hygroscopic HO2CCMe(CN)CH2CH2CN (II). II (12 g.) in 50 cc. CSHSN and 3 g. Cu powder refluxed 1 hr. at 110.degree., cooled, filtered, the CSHSN removed in vacuo, the residue treated with N HCl, extd. with EtOAc, and the ext. worked up yielded 6 g. MeCH(CN)CH2CH2CN, b12 135.degree., n25D 1.4312. CH2(CO2Et)2 (116 g.), 2 g. Na, 30 cc. abs. EtOH and 73 g. CH2:CMeCO2Me in 500 cc. dry Et2O refluxed 5 hrs., cooled, washed with 12 cc. AcOH in 120 cc. H2O, then with H2O, dried, and worked up yielded 140 g. MeO2CCCHMeCH2CH(CO2Et)2 (III), b11 155-60.degree.. III (138 g.) in 230 g. MeCO2CH treated with 10-15 drops CH2:CHCN from a 29-g. portion and then with 1 cc. 30% KOH-MeOH at 35.degree., the remainder of the CH2:CHCN added while twice 1 cc. KOH-MeOH was added, stirred 2 hrs. at 30.degree., neutralized with 2N HCl, and poured into 1 l. H2O, and the crude product recrystd. from petr. ether yielded 148 g. MeO2CCCHMeCH2(CO2Et)2CH2CH2CN (IV), needles, m. 42.degree.. IV (55 g.) in 150 cc. concd. HCl refluxed 2 hrs., treated with 50 cc. concd. HCl, refluxed 6 hrs., kept overnight, filtered evapd. in vacuo, the oily residue dried over H2SO4 and KOH, and the solid residue powdered and extd. in a Soxhlet app. with Et2O yielded 37.5 g. HO2CCCHMeCH2CH(CO2H)CH2CH2CO2H (V), m. 95.degree. (Me2CO and CHCl3). V (1.5 g.) heated at 150.degree./12 mm. and the sublimate resublimed yielded 0.7 g. cyclic anhydride of V, needles, m. 82.degree.. V (15 g.) in 30 cc. Ac2O refluxed 6 hrs., evapd. up to 180.degree.. heated at 210.degree./12 mm., and distd. gave 5 g. 3-methyl-4-oxocyclohexane-carboxylic acid, b0.1 128-30.degree., m. 94.degree.. V (20 g.) in 100 cc. concd. NH4OH evapd. on the water bath in vacuo left 23 g. NH4 salt of V. The NH4 salt (20 g.) in H2O treated with 46 g. AgNO3 in H2O ptd. the amorphous Ag salt of V, decomp. 205.degree.. Dry Br (9 cc.) in 46 cc. dry CC14 treated with 30 g. Ag salt of V at 50.degree. in small portions, refluxed 0.5 hr., filtered, and the filtrate shaken with aq. satd.

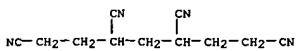
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L4 ANSWER 37 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

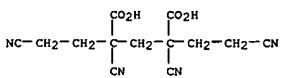
and 10% aq. KOH contg. NaCl, dried, and distd. yielded 6 g. .alpha.-methyl-.gamma.-bromoethyl-.gamma.-butyrolactone, b0.01  
73.degree.. V (12 g.), 48 cc. abs. EtOH, and 1 cc. concd. H2SO4 refluxed 7 hrs., gave 12 g. tri-Et ester of V, b0.07 110-15.degree.. V (15 g.), 45 cc. abs. MeOH, and 1.2 concd. HCl gave similarly 13 g. tri-Me ester (VI) b0.02 99-101.degree.. VI (40 g.) and 32 cc. liquid NH3 kept 4 weeks at room temp. in a sealed tube yielded 32.5 g. triamide (VII) of V, needles, m. 169.degree. (Me2CO). VII (10 g.) and 10 cc. POCl3 heated with stirring to 70.degree., cooled, dissolved in iced H2O, neutralized with Na2CO3, shaken with EtOAc, and the ext. distd. gave 1.0 g. NCCH2CH2CH(CN)CH2CH(CN)Me, b0.01 80.degree. (bath), n25D 1.4646. NCCH2CO2Et (VIII) (56.6 g.) in 100 g. dioxane treated dropwise with 53 g. CH2:CHCN while 4.5 cc. 30% KOH-MeOH was added in 4 portions, stirred 2 hrs. at room temp., neutralized with 2N HCl, and poured into 1 l. H2O yielded 105 g. Et ester (IX), prisms m. 37.degree., of HO2C(NC)C(CH2CH2CN)2 (X). IX (50 g.) in 150 cc. EtOH treated dropwise with 12.7 g. KOH in 50 cc. EtOH below 50.degree., filtered, and the residual salt washed with EtOH, dried in vacuo (48 g.), dissolved in a little H2O, acidified with concd. HCl, and extd. with Et2O yielded 31 g. very hygroscopic X, m. 84.degree.. X (7 g.) in 40 cc. C5H6N refluxed with stirring during 45 min. at 110.degree. with 2 g. Cu powder, cooled, filtered, evapd. in vacuo, the residue treated with a little N HCl, extd. with EtOAc, and the ext. worked up yielded 2.2 g. NCCH(CH2CH2CN)2, b0.01 85.degree. (bath), n25D 1.4644. VIII (100 g.) and 30 g. 40% aq. CH2O treated with cooling and shaking with 0.6 cc. piperidine, refrigerated 2 hrs., kept at room temp. overnight, refluxed 12 hrs., neutralized with dil. HCl, and the product sepd., dried, and distd. yielded 51 g. CH2ICH(CN)CO2Et2 (XI), b0.07 145-50.degree.. VIII (57 g.) and 11.5 g. Na in 350 cc. refluxing abs. EtOH treated dropwise with stirring with 60 g. CH2Br2, stirred 3 hrs. at room temp. refluxed 4 hrs., kept overnight, filtered, concd., poured into H2O, neutralized with dil. HCl, and extd. with Et2O yielded XI. XI (47 g.) in 100 cc. Me3COH dropwise with stirring at reflux with 21 g. CH2:CHCN, while three 1-cc. portions 30% KOH-MeOH were added, stirred 3 hrs. at room temp., neutralized with 2N HCl, poured into 1 l. H2O, and worked up in the usual manner yielded 32 g. CH2ICH(CN)CO2Et2CH2CH2CN2 (XII), needles, m. 95.degree. (EtOH). XII (30 g.) in 100 cc. refluxing EtOH treated with stirring dropwise with 9.7 g. KOH in 30 cc. EtOH, kept overnight, filtered, and the solid washed, dried, acidified with concd. HCl, and extd. with Et2O yielded 13 g. CH2ICH(CN)(CO2H)CH2CH2CN2 (XIII), very hygroscopic, m. 136.degree.. XIII (5 g.) in 50 cc. CSHSN refluxed 1.5 hrs. at 110.degree. with stirring with 3 g. Cu, cooled, filtered, evapd. in vacuo, the residue treated with a little N HCl, extd. with EtOAc, and the ext. worked up yielded 0.5 g. CH2ICH(CN)CH2CH2CN2, b0.01 95.degree. (bath). CH2ICH(CO2Et)2 (30 g.) in 50 cc. refluxing dioxane treated dropwise with stirring with 10 g. CH2:CHCN, and the mixt. treated in the usual manner at the beginning and the end of the addn. with 1 cc. 30% KOH-MeOH, and then processed gave 18 g. CH2ICH(CO2Et)2CH2CH2CN2, leaflets, m. 93.degree. (EtOH). By sapon. of the appropriate nitriles with concd. HCl or HBr were prep. acids HO2CCCH2CH2CHMeCO2H, m. 77.degree., V, m. 95.degree., and HO2CC(CH2CH2CO2H)2, m. 114.degree.. IT 64918-24-7, 1,3,5,7-Heptanetetracarbonitrile 100725-15-3

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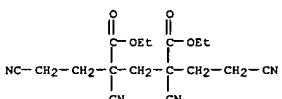
L4 ANSWER 38 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)  
Glutaric acid, 2,4-dicyano-2,4-bis(2-cyanoethyl)- 107273-45-0  
Glutaric acid, 2,4-dicyano-2,4-bis(2-cyanoethyl)-, diethyl ester  
(prep. of)  
RN 64918-24-7 CAPLUS  
CN 1,3,5,7-Heptanetetracarbonitrile (6CI, 9CI) (CA INDEX NAME)



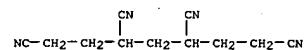
RN 100725-15-3 CAPLUS  
CN Glutaric acid, 2,4-dicyano-2,4-bis(2-cyanoethyl)- (6CI) (CA INDEX NAME)



RN 107273-45-0 CAPLUS  
CN Glutaric acid, 2,4-dicyano-2,4-bis(2-cyanoethyl)-, diethyl ester (6CI)  
(CA INDEX NAME)



L4 ANSWER 39 OF 39 CAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 1955-59012 CAPLUS  
DOCUMENT NUMBER: 49-59012  
ORIGINAL REFERENCE NO.: 49-11363b-d  
TITLE: The properties of nitrile binary systems and their  
relation to polyacrylonitrile solubility  
AUTHOR(S): Phibbs, M. K.  
CORPORATE SOURCE: DuPont Co. Can., Kingston, ON  
SOURCE: Journal of Physical Chemistry (1955), 59, 346-53  
CODEN: JPCHAX; ISSN: 0022-3654  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
AB The solvent powers of liquids for 1,3,5,7-tetracyanoheptane and for  
polyacrylonitrile are qualitatively the same. Good nitrile solvents are  
characterized by heat evolution and vol. expansion on mixing with  
glutaronitrile. A qual. correlation exists between excess entropies of  
mixing and nonideal vol. changes on mixing in the nitrile binary systems.  
Vapor pressure and viscosity data are given for some glutaronitrile  
binary systems. No correlation exists between viscosity and any of the other  
measured properties. Good nitrile solvents must be composed of mols.  
with high dipole moments, a low hydrocarbon/polar group ratio, and no  
self-H-bonding power.  
IT 64918-24-7, 1,3,5,7-Heptanetetracarbonitrile  
(solv. of)  
RN 64918-24-7 CAPLUS  
CN 1,3,5,7-Heptanetetracarbonitrile (6CI, 9CI) (CA INDEX NAME)



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ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF

LOGOFF? (Y)/N/HOLD:y

COST IN U.S. DOLLARS

SINCE FILE ENTRY	TOTAL SESSION
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FULL ESTIMATED COST

181.60	330.36
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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE ENTRY	TOTAL SESSION
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CA SUBSCRIBER PRICE

-25.39	-25.39
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STN INTERNATIONAL LOGOFF AT 11:51:16 ON 14 DEC 2003